



INTERNATIONAL SEED TESTING ASSOCIATION (ISTA)

Secretariat, Zürichstrasse 50, 8303 Bassersdorf, CH-Switzerland

Phone: +41-44-838 60 00, Fax: +41-44-838 60 01, Email: ista.office@ista.ch, <http://www.seedtest.org>

SLIDES ON SEED PATHOLOGY

PLANT SPECIES: **VICIA FABAE**
FUNGUS SPECIES: **ASCOCHYTA FABAE**

Subject	Description	Photographer	Slide Number	Order
Colonies	Colonies on agar	1	403	
Young Seedling	Young seedlings	1	404	
Leaves	Symptoms	1	401	
Pods / Ears	Symptoms	1	402	

PLANT SPECIES: **VICIA FABAE**
NEMATODES: **DITYLENCHUS DIPSACI**

Subject	Description	Photographer	Slide Number	Order
	Microscopic view of Nematode	3	472 out of stock	
	Microscopic view of anterior end	3	471	
Dry Seeds	Coming out of seed after immersion in water Symptoms on tegument	2 2	457 459	
Colonies	Specimens on the germinating seed	2	458	
Roots	Does not occur on roots			
Young Seedling	Necrosis/ Hyperplasia of the Cotyledons Symptoms on tegument with desiccate earworms	2 2	456 out of stock 460 out of stock	



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PLANT SPECIES: **PISUM SATIVUM**
 FUNGUS SPECIES: **ASCOCHYTA SPP**
 VARIETY: **ASCOCHYTA PISI**

Subject	Description	Photographer	Slide Number	Order
Dry Seeds	Symptoms	1	407 out of stock	
Colonies	From seed on malt agar	1	410	
Spores	Pycnidia and pycnidiospores under microscope	1	413	
Fruit bodies	Pycnidia and pycnidiospores under microscope	1	413	
Young Seedling	Radicles killed by the pathogen, dead seeds	1	408	
Pods/ Ears	Symptoms on pods	1	405 out of stock	
	Symptoms on seed inside pods	1	406 out of stock	
Fungi Differential-Diagnosis	Pycnidia of <i>Ascochyta pisi</i> (right) and <i>Ascochyta pinodes</i> (left) on agar after seeds have been removed	1	411	
	Colonies of <i>A.Pisi</i> (bottom right), <i>A. Pinodes</i> (bottom left), <i>A. Pinodella</i> (top in the middle)	1	412	

PLANT SPECIES: **BRASSICA SPP**
 FUNGUS SPECIES: **LEPTOSPHAERIA MACULENS (PHOMA LINGAM)**

Subject	Description	Photographer	Slide Number	Order
Colonies	On malt agar media	1	421 out of stock	
	On blotter (2 -4 D method)	1	422	
Spores	Pycnidia and pycnidiospores under the microscope	1	423	
Young Seedlings	Symptoms at the neck of plants	1	420	



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Leaves	Symptoms	1	419 473	
Pods/ Ears	Symptoms	8	474	

NEMATODES

BACTERIA SPECIES: **XANTHOMONAS CAMPESTRIS**

METHOD APPLIED: B + D: see Working Sheet No. 50

E: Fluorescence

Subject	Description	Photographer	Slide Number	Order
On seedling B	Colonies on NSCA (nutrient, starch, cycloheximide agar) small yellow	6	464 out of stock	
On leaves D	Symptoms on cabbage leaves	6	465	
On seed E	Cells from YDC culture stained by IF and observed with a 100x objective	6	463 out of stock	

PLANT SPECIES: **PHASEOLUS SPP**

FUNGUS SPECIES: **COLLETOTRICUM LINDEMUTHIANUM**

Subject	Description	Photographer	Slide Number	Order
Dry Seeds	Symptoms	1	415 out of stock	
Colonies	Colonies obtained from infected seeds on malt agar media	1	416 out of stock	
Fruit bodies	Acervula and satae under the microscope	1	418 out of stock	
Leaves	Symptoms on Cotyledons, methods in rolled blotter test after 7 days	1	417 out of stock	
Pods/ Ears		1	414 out of stock	



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PLANT SPECIES: **TRITICUM SPP**
FUNGUS SPECIES: **LEPTOSPHAERIA NODORUM (SEPTORIA NODORUM)**

Subject	Description	Photographer	Slide Number	Order
Dry Seeds	Symptoms (left: infected – right: healthy)	1	425	
Colonies	Colonies on malt agar media	1	427	
	In malt agar test	4	467	
	Sulphur- yellow fluorescent spots on the blotters under NUV- light	4	468	
Spores	Pycnidiospores under the microscope	1	428	
Young Seedling	Symptoms (right) – healthy (left)	1	426	
	Symptoms on coleoptylens	4	466	
Pods/ Ears	Symptoms on Ears	1	424	

PLANT SPECIES: **TRITICUM SPP**
FUNGUS SPECIES: **USTILAGO TRITICI**

Subject	Description	Photographer	Slide Number	Order
Mycelium	Blue stained mycelium in the scutellum of an infected wheat embryo	1	440 out of stock	
	Pieces of blue stained mycelium in the scutellum (higher magnification)	1	441 out of stock	
Pods/ Ears	Symptoms on heads of wheat	1	439 out of stock	



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PLANT SPECIES: TRITICUM SPP
FUNGUS SPECIES: TILLETIA TRITICI (TILLETIA CARIES)

Subject	Description	Photographer	Slide Number	Order
Dry Seeds	Left: infected – right: healthy	1	444 out of stock	
Spores	Spores in germination: basidia and basidiospores	1	445	
Pods/ Ears	Symptoms on green healds	1	443 out of stock	

PLANT SPECIES: TRITICUM SPP
FUNGUS SPECIES: FUSARIUM SPP

Subject	Description	Photographer	Slide Number	Order
Dry Seeds	Shrivelled seeds	1	453	

PLANT SPECIES: TRITICUM SPP
FUNGUS SPECIES: MONOGRAPHELLA NIVALIS (FUSARIUM NIVALE)

Subject	Description	Photographer	Slide Number	Order
Colonies	Pink colonies in malt agar test	8	477	
Young Seedling	Abnormal seedling Healthy (left) – infected (right)	1	454 out of stock	
		1	455 out of stock	

PLANT SPECIES: TRITICUM SPP
FUNGUS SPECIES: ANGUINA TRITICI

Subject	Description	Photographer	Slide Number	Order
Dry Seeds	Galls and healthy seeds	1	462 out of stock	
Leaves	Galls	4	461	



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PLANT SPECIES: **HORDEUM SPP**
FUNGUS SPECIES: **PYRENOPHORA GRAMINEA (DRECHSLERA GRAMINEA)**

Subject	Description	Photographer	Slide Number	Order
Colonies	Reverse surface colony on potatoe dextrose agar	5 / 7	470 out of stock	
Young Seedling	Symptoms on leaves	5 / 7	469 out of stock	
Leaves	All Stage up to sporulation	8	478	
Pods/ Ears		8	479	

PLANT SPECIES: **HORDEUM SPP**
FUNGUS SPECIES: **USTILAGO TRITICI (USTILAGO NUDA)**

Subject	Description	Photographer	Slide Number	Order
Mycelium	Brown mycelium (without coloration in the scutellum) of barley embryo	1	442 out of stock	
Field Symptoms	Symptoms on leaves	8	480	

PLANT SPECIES: **BETA VULGARIS**
FUNGUS SPECIES: **PLEOSPORA BETAE (PHOMA BETAE)**

Subject	Description	Photographer	Slide Number	Order
Colonies	Colonies on malt agar media Holdfast on water agar	1	447	
		1	450	
Spores	Pycnidia and Pycnidiospores under the microscope	1	449 out of stock	
Fruit bodies	Pycnidia and Pycnidiospores under the microscope	1	449 out of stock	
Roots	Pycnidia on radicle			
Young Seedling	Symptoms on black root on blotter	1	446 out of stock	

PLANT SPECIES: **APIUM GRAVEOLENS**
FUNGUS SPECIES: **SEPTORIA APIICOLA (SEPTORIA APII)**



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Subject	Description	Photographer	Slide Number	Order
Young Seedling	Symptoms obtained 10 days after a spray of spore suspension on healthy seedlings	1	452 out of stock	
Leaves	Symptoms on leaves	1	451 out of stock	

PLANT SPECIES: **HELIANTHUS ANNUUS**

FUNGUS SPECIES: **BOTRYTIS CINEREA**

Subject	Description	Photographer	Slide Number	Order
Colonies	Detection by blotter method Seed disinfection: shells healthy almonds still infected on malt agar	1	435 out of stock	
		1	436 out of stock	
Fruit bodies	Fructification under lens Magnif. 120 Fructification under microscope magnification 400	1	437	
		1	438	
Young Seedling	Healthy (top) - Infected seedling (bottom)	1	434 out of stock	
Pods/ Ears	Symptoms on fructification (flowerhead)	1	433 out of stock	

PLANT SPECIES: **LINUM USSITATISSIMUM**

FUNGUS SPECIES: **BOTRYTIS CINEREA**

Subject	Description	Photographer	Slide Number	Order
Dry Seeds	Symptoms healthy (left) – infected (right)	1	430 out of stock	
Colonies	Colonies from seeds on blotter infected (left) – healthy (right)	1	432 out of stock	
Young Seedling	Infected Seedling in the field	1	431	
Pods/ Ears	Fructification of the pathogen on boll	1	429 out of stock	



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Field Symptoms	Infected seedlings in the field	1	431	
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